

EXECUTIVE SUMMARY

Virginia developed its initial Nonpoint Source Pollution Management Program in 1988. The purpose of the program was to build on existing nonpoint source (NPS) pollution control efforts and to establish a comprehensive approach to NPS pollution control. Since then, state and federal program goals, requirements and laws have changed to reflect the dynamics of addressing NPS pollution. During the last several years technology has advanced, as well, keeping pace with the ever growing need for addressing nonpoint sources of pollution. As a result of these changes, and recent federal program initiatives, it was determined that a program update should be developed.

During 1999, Virginia developed this Nonpoint Source Pollution Management Program update to guide and direct federal, state, and local actions, as well as funding and citizen participation. A major program update was necessary to incorporate changes in federal and state regulations and programs, and to ensure that Virginia remains eligible for federal program funding.

In order to meet the ambitious goals and objectives set forth in this program update, it is necessary to maintain enhanced benefit status. The ability to meet the goals presented in this document is dependent upon the level of future funding to ensure sufficient resources are available.

A work group process was used to develop this program update. Work groups were formed for the following NPS source pollution categories and subject areas:

- watershed prioritization
- agriculture

- forestry
- construction and development
- monitoring and tracking
- resource extraction
- hydromodification
- grant and technical assistance coordination

The work groups comprised state and local agencies and various public and private interests. The work groups were facilitated by Department of Conservation and Recreation staff. The work groups identified goals and established objectives and strategies for each source category. These goals, objectives, and strategies are listed in tables within each NPS source pollution category chapter. The tables detail what actions will be taken over the next several years to address nonpoint sources of pollution.

There are 14 chapters in this document that describe the Virginia Nonpoint Source Management Program. Chapters I through IV provide introductory and background information on the program, federal guidance, and the update process. Chapters V through XII represent each source category. These Chapters provide a description of the main issues and the programs and tools available to address nonpoint source pollution. Chapter XIII describes the Virginia Coastal Nonpoint Source Pollution Control Program (CZARA Section 6217) in a similar manner. Chapter XIV describes program implementation and reporting.

The following sections list all goals and objectives presented in chapters IV through XIII.

WATERSHED PRIORITIZATION

Long-term Goal

Develop and fully implement a cooperative watershed management program that integrates a comprehensive basin management and targeted sub-basin approach to implementing nonpoint source pollution control

Objective 1

By 2004, establish well integrated and coordinated basin planning and management programs that minimize program overlap and leverage program resources to address contaminants that may pose risks to either the environment or public health

Objective 2

By 2005, establish well integrated and coordinated assessment and reporting programs that minimize program overlap and duplication

Objective 3

By 2003, the Department of Environmental Quality (DEQ) and the Department of Conservation and Recreation will develop the protocols and data needed to prioritize total maximum daily load (TMDL) development based on severity of impact

AGRICULTURE

Long-term Goal 1 - Confined Animal Feeding Operations

Maintain existing beneficial uses in unimpaired state waters and restore beneficial uses in surface waters where confined animal feeding operations are contributing to a water quality impairment caused by sediment, nutrients, or pathogens as listed in the 303d TMDL Priority List Report, or where ground water contaminants originating from confined animal feeding operations exceed the state ground water standard, by 2014

Objective 1

Provide assistance to producers to ensure that farms accounting for 60 per cent of the state's total number of beef, dairy, and swine animals in confinement will have adequate waste management systems and nutrient management plans by 2004

Objective 2

Provide assistance to ensure that poultry farms with 200 or more animal units will implement nitrogen and phosphorus based nutrient management plans, proper waste storage practices, and waste tracking and accounting procedures by 2004

Long-term Goal 2 - Livestock Grazing

Maintain existing beneficial uses in unimpaired state waters and restore beneficial uses in surface waters where livestock grazing operations are contributing to a water quality impairment caused by sediment, nutrients, or pathogens as listed in the 303d TMDL Priority List Report, or where ground water contaminants originating from livestock grazing operations exceed the state ground water standard, by 2014.

Objective 3

Provide assistance to farmers to ensure that controlled stream access practices will be installed on 30 per cent of livestock grazing operations for stream segments where pathogens, sediment, or nutrients from grazing livestock are contributing to an impairment by 2004

Long-term Goal 3 - Cropland Management (includes field crops, vegetables, orchards, and vineyards)

Agricultural cropland will be managed in ways which maintain or restore beneficial uses in surface waters and protect water quality in ground water by controlling losses of sediment to surface waters and losses of nutrients and toxics to ground and surface waters by 2004.

Objective 4

90 per cent of highly erodible cropland will be managed in accordance with a Natural Resources Conservation

Service (NRCS) conservation plan in watersheds where agricultural sediment is contributing to an impairment, or as necessary where basin management plans identify specific sediment reduction goals, by 2004

Objective 5

Nutrient management plans will be developed as required where basin management plans identify specific agricultural nutrient reduction targets by 2004

Objective 6

Agricultural sources of toxics will be controlled by maintaining and implementing IPM and pesticide management programs and regulations to protect ground and surface water quality statewide and to minimize effects on human and wildlife populations

Objective 7

60 per cent of farm acreage in irrigated cropland will implement improved irrigation scheduling practices by 2004

Long-term Goal 4 - Nursery and Ornamentals Management

Commercial nursery and ornamental operations will be managed in ways which maintain or restore beneficial uses in surface waters and water quality in ground water by controlling losses of sediment to surface waters and losses of nutrients and toxics to ground and surface waters by 2014

Objective 8

30 per cent of production facilities in the container nursery and greenhouse industry will use containment systems to trap sediment and recycle nutrients or implement BMPs of equivalent effectiveness by 2004

Long-term Goal 5 - Agricultural NPS Program Development

Continue to develop and implement agricultural NPS programs to effectively prevent and reduce pollution in ground and surface waters through 2014.

Objective 9

Technical and administrative program capabilities will be enhanced to address potential pollution concerns originating from confined animal feeding operations, livestock grazing, cropland management and nursery and ornamental operations through 2004

FORESTRY

Long-term Goal 1

Reduce nutrient and sediment pollution entering Virginia's waters through full implementation of the silvicultural water quality law

Long-term Goal 2

Maintain reduced levels of all nonpoint source pollutants to sustain designated uses and achieve beneficial uses of waters of the commonwealth by 2015

Objective 1

Reduce nonpoint source pollution from all harvesting activities throughout Virginia to maintain acceptable water quality and habitat

Objective 2

Ensure prompt reforestation and site stabilization using all applicable BMPs following harvest

Objective 3

Apply state-of-the art best management practices to maintained forest roads and maintain applicable standards and procedures in the use of pesticides and fire used in silvicultural operations

Objective 4

Support the Chesapeake Bay Program Riparian Forest Buffer Directive through the establishment of at least 610 miles of riparian forest buffer by 2010 within the bay watershed and target riparian restoration throughout Virginia's river corridors

Objective 5

Foster local partnerships, ordinances and innovative strategies to conserve forest lands critical to water resources, wildlife habitat, sustainable forest industries and local communities

CONSTRUCTION & DEVELOPMENT

Long-term Goal 1 - Construction Sites

Control nonpoint source pollutants related to erosion and sediment control on construction sites according to current Virginia Erosion and Sediment Control and Stormwater Management laws and regulations

Objective 1

By the year 2005, 85 per cent of Virginia's local government adopted ESC programs will be fully consistent with the state's minimum standards of effectiveness

Objective 2

By the year 2005, all state and federal agencies will achieve compliance rates on projects subject to Erosion and Sediment Control and Stormwater Management regulations

Objective 3

By the year 2003, establish effective, efficient and consistent enforcement of Virginia's Erosion and Sediment Control Law and Regulations

Objective 4

By the year 2001, develop a statewide tracking database/spreadsheet which incorporates VDOT, DEQ, DCR, and CBLAD local program and permit tracking information regarding regulated land-disturbing activities

Objective 5

By the year 2003, ensure that state agencies which are responsible for resource protection related to regulated

land-disturbing activities operate in an efficient and coordinated fashion through the development and implementation of an operational Memorandum Of Understanding (M.O.U.)

Objective 6

By the year 2002, develop an educational outreach program utilizing a variety of communication media focused on providing the general public with a basic overall understanding of nonpoint source pollution as it relates to erosion and sediment control

Objective 7

By the year 2002, investigate roadside ditch maintenance activities relative to compliance with the ESC law and address through DCR's annual plan review of VDOT's annual plan and specifications submittal

Objective 8

By the year 2008, conservation standards shall be developed to incorporate criteria, techniques, and methods for various soil types and the physical and chemical alterations to those soils that have resulted from construction and development land use changes

Long-term Goal 2 - Impervious Cover

Adequately address nonpoint source pollutants related to stream channel erosion due to increased volume and rates of flow resulting from increased impervious cover

Objective 9

By 2005, establish a statewide mandate for the local adoption of comprehensive SWM ordinances

Objective 10

By the year 2003, develop and adopt state wide comprehensive and effective stream channel erosion control criteria established within the regulatory framework

Objective 11

By the year 2003, all local governments and state agencies will be implementing effective development options and economic incentives for the preservation of natural stream channels and stream channel buffers

Objective 12

By the year 2005, ensure that 85 per cent of SWM BMP facilities are tracked administratively and properly maintained

Objective 13

By the year 2003, provide guidance on the permit requirements associated with the environmental impacts of stormwater management ponds

Long-term Goal 3 - New and Existing Developed Surfaces

Adequately address nonpoint source pollutants related to new and existing developed surfaces

Objective 14

By 2005, develop a comprehensive statewide mandate for the local adoption of comprehensive SWM ordinances which include water quality provisions

Objective 15

By the year 2003 develop technical and administrative guidelines for the development of watershed studies and implementation plans

Objective 16

By the year 2004 establish state wide planning and development guidelines and strategies such as "Low Impact Development" and "Innovative Site Design Techniques" which specifically minimize the impacts of development on water quality

Objective 17

By the year 2003 provide enforcement tools to ensure effective local implementation of local water quality mandates

Objective 18

By the year 2005, 85 per cent of Virginia's local government adopted SWM programs will be fully consistent with the state's minimum standards of effectiveness

Objective 19

By the year 2002, develop an educational outreach

program utilizing a variety of communication media directed at providing the general public with a basic overall understanding of nonpoint source pollution as it relates to urban activities such as lawn care, pets, household chemicals and cleaning agents etc.

Objective 20

By the year 2005 ensure that 85 per cent of SWM BMP facilities are tracked administratively and properly maintained

Objective 21

By the year 2005, establish minimum guidelines for controlling nonpoint source pollution from pervious areas

Objective 22

By the year 2001, develop a statewide tracking database/spreadsheet which incorporates DEQ, DCR, and CBLAD local program and permit tracking information

Objective 23

By the year 2003, ensure that state agencies which are responsible for resource protection related to regulated land-disturbing activities operate in an efficient and coordinated fashion through the development and implementation of an operational Memorandum Of Understanding (M.O.U.)

Long-term Goal 4 - On-Site Sewage Disposal Systems

Adequately address nonpoint source pollutants related to new and failing on-site sewage disposal systems

Objective 24

By the year 2002, develop and implement comprehensive septic system maintenance entity for policies and procedures for onsite sewage disposal systems

Objective 25

By the year 2005, develop mechanisms, framework, and tracking systems in order to assess failing systems and actual pollutant loading

Objective 26

By the year 2003, develop and present statewide onsite sewage disposal educational programs in cooperation with local governments

MONITORING & TRACKING

Long-term Goal

The overall goal of Virginia's nonpoint source pollution monitoring and tracking programs is to support the development, implementation and evaluation of the nonpoint source pollution management program. Monitoring and tracking measure the effectiveness of the management program to ensure that the beneficial uses of Virginia's waters are attained and maintained

Objective 1

Evaluate the state's waters for nonpoint source pollution-related problems

Objective 2

Evaluate the state's waters, on a watershed basis, for NPS pollution related problems to assist in targeting NPS pollution prevention activities

Objective 3

Coordinate with other public/private groups that contribute to the state's understanding of NPS pollution related issues

Objective 4

Prioritize watersheds based on the potential of adverse impacts due to NPS pollution

Objective 5

Determine the effectiveness of NPS pollution control projects, programs, or strategies across various geographical scales (river basin to watershed to site-specific)

Objective 6

Investigate and determine NPS pollution related contributions or potential contributions on groundwater statewide

Objective 7

Improve support and use of citizen monitoring resources

RESOURCE EXTRACTION

Long-term Goal

To improve surface and ground water quality in watersheds throughout the Commonwealth of Virginia by reducing nonpoint source pollution associated with abandoned and orphaned resource extraction sites in 20 - 25 sub-watersheds for the purpose of obtaining designated uses. This can be accomplished through proper site planning, implementation of best management practices, acid mine drainage remediation and land reclamation activities in associated high priority watersheds or areas with identified impaired stream segments.

Objective 1

Determine the magnitude and quantity of nonpoint source pollution impacts to the environment from abandoned coal mines, orphaned mineral mine sites, and orphaned gas and oil wells so that reclamation activities can be prioritized

Objective 2

Continue and enhance, where possible, the reclamation of abandoned coal mines, orphaned mineral mines, and orphaned gas and oil sites with the greatest potential for reducing nonpoint source pollution to surface and ground water from TSS, heavy metals, and acid mine drainage (low pH), that impact the health and safety of residents and living resources of Virginia

Objective 3

Support and develop research and education activities to improve the knowledge and understanding of Virginia residents regarding resource extraction activities and the environment

Objective 4

Identify opportunities for developing partnerships with state and federal agencies and other interested organizations to address nonpoint source pollution from abandoned mines

HYDROMODIFICATION

Long-term Goal

Adverse effects of hydrologic modifications on water quality throughout the Commonwealth of Virginia will be minimized by using proper design methodologies and best management practices (BMPs)

Objective 1

Improve the design, implementation and maintenance of BMPs installed throughout the Commonwealth

Objective 2

Strengthen and improve design standards, specifications and measures implemented for streambank restoration projects throughout the commonwealth

Objective 3

Identify streams throughout the commonwealth that have nonpoint source pollution problems related to channelization, channel instability or streambank erosion.

Objective 4

Develop and implement minimum instream flow regulations for all streams in Virginia

Objective 5

Identify dredging and instream sand mining projects throughout the state that may contribute to nonpoint source pollution.

GRANT AND TECHNICAL ASSISTANCE COORDINATION

Long-term Goal 1

To achieve maximum water quality benefits from available grant funds.

Objective 1

By the FY2001 grant cycle, DCR, DEQ, Chesapeake Bay Local Assistance Department (CBLAD), and other cooperating state and federal agencies will establish a structure and process to ensure that grant projects are reviewed consistent with appropriate technical and programmatic expertise

Objective 2

By the FY 2001 grant cycle, cooperating state and federal agencies will establish consistent grant schedules and ensure that project sponsors are aware of funding opportunities

Objective 3

By the FY 2001 grant cycle, cooperating state and federal agencies will develop a formal process to enhance project coordination between different grant programs, and to help target projects through the most appropriate funding source

Objective 4

By the FY 2002 grant cycle, cooperating agencies will work to ensure that watershed project proposals are well connected to other watershed activities and that a plan of actions exists.

Long-term Goal 2

By 2005, ensure that technical assistance and support needed to achieve maximum water quality benefits is established.

Objective 5

By 2004, cooperating state and federal agencies will assess existing technical assistance programs to ensure they have adequate staffing to meet program demands.

Objective 6

By 2005, cooperating state and federal agencies will take steps to increase awareness and visibility of technical assistance programs

Long-term Goal 3

Develop new public-private partnerships to enhance funding for ongoing nonpoint source program initiatives and implementation activities

Objective 7

By 2002, the Department of Conservation and Recreation will expand the efforts of the community development program to secure funding from philanthropic and corporate foundations to support nonpoint source pollution control activities

COASTAL NONPOINT SOURCE POLLUTION CONTROL PROGRAM

Long-term Goal (15 years)

To ensure that all applicable management measures and additional measures to reduce nonpoint source pollution are implemented by 2014 for the purpose of attaining designated uses

Irrigation water management:

Objective

Improve the irrigation management skills of Virginia irrigators in order to protect Virginia's surface and groundwater resources

Forestry:

Objective

Promote and support reduced water quality impacts and the use of best management practices (BMPs) for forestry operations

Total suspended solids reductions for new development:

Objective

Develop stormwater management plans throughout the coastal zone

Priority watershed pollutant reduction and existing development:

Objective

Improve water quality in those watersheds most in

need of restoration and nonpoint source pollution reduction actions

Adequate separation distance for OSDS and limit nitrogen loadings near nitrogen limited surface waters:

Objective

Reduce existing onsite sewage disposal systems (OSDS) impacts to water quality and prevent impacts from new systems

Roads, highways, and bridge runoff systems for roads:

Objective

Reduce runoff from roads, highways, and bridges

Runoff systems for local roads not within the Chesapeake Bay Preservation Areas:

Objective

Reduce runoff from local roads outside Chesapeake Bay Preservation Areas

Stormwater runoff from hull maintenance operations:

Objective

Reduce runoff from hull maintenance facilities

Fish waste:

Objective

Reduce potential NPS pollution from improper disposal of fish waste

A process to provide sufficient technical assistance for marina development and operation:

Objective

Enhance technical assistance for development and operation to marina owners and operators.

Process to improve surface water quality and restore instream and riparian habitat through the operation and maintenance of existing modified channels:

Objective

Improve surface water quality and instream and riparian habitat.

Manage the operation of dams to protect surface water quality and instream and riparian habitat and to assess nonpoint source problems resulting from excessive surface water withdrawals:

Objective

Improve surface water quality and instream and riparian habitat.

A process to identify and develop strategies to solve existing nonpoint source pollution problems caused by streambank or shoreline erosion that do not come up for review under existing permit authorities:

Objective

Enhance existing non-permit based streambank and shoreline erosion control programs.

A plan to assess over time the success of the management measures in reducing pollution loads and improving water quality:

Objective

Assess implementation of management measures